



VALIDATION OPINION
for the Post Registration Changes of the CDM Project
Activity

**Changes to start date of Crediting
Period**

**24 MW Dummagudem Hydel
project by SLS Power
Corporation Limited**

In
INDIA

Report No. 01 997 9105074781

Version 02, 2014-06-12

Designated Operational Entity (DOE)

TÜV Rheinland (China) Ltd

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I. Project data:

Project title:	24 MW Dummagudem Hydel project by SLS Power Corporation Limited	Report No.: 01 997 9105074781
Registration No. / Date:	4818 / 11/10/2011	Current report version No.: 02
Monitoring period:	NA	Date of current report version: 2014-06-12
Methodology:	ACM0002, version 11	Date of first issue: 2014-01-07
Publication of MR:	NA	
Average emission reductions:	Estimated: 89,267 tCO ₂ e/yr as indicated in the registered PDD (version 04, dated 09-10-2011)	Verified: NA
GHG reducing measure/technology:	Electricity generation by renewable hydro energy resource	

Party	Project participants	Party considered a project participant	Contract party
India	M/s SLS Power Corporation Limited	No	<input checked="" type="checkbox"/>

II. Verification Team:

Verification Team			Role									
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Team leader	Acting Team Leader	Local Expert	Team Member (Auditor)	Technical Expert	Acting Tech. Expert	Trainee Auditor	Technical Reviewer	Expert to TR	Trainee TR
Mr. R. Murali	India	1.2, 3.1	X		X		X					
Ms. C. Indumathi	India	1.2								X		

(Adjust accordingly, i.e. provide one line per person)

Verification Phases	Verification Status
<input checked="" type="checkbox"/> Desk Review <input checked="" type="checkbox"/> Follow up interviews <input checked="" type="checkbox"/> Resolution of outstanding issues	<input checked="" type="checkbox"/> Full Approval and Submission for Approval <input type="checkbox"/> Rejected <input type="checkbox"/> Corrective Actions / Clarifications Requested

III. Verification Report:

Final approval	Released	Distribution
<input checked="" type="checkbox"/>	By: Mr. Henri Phan	<input type="checkbox"/> No distribution without permission from the Client or responsible organizational unit <input checked="" type="checkbox"/> Unrestricted distribution
Date: 2014-06-12		

Abbreviations

APERC	Andhra Pradesh Electricity Regulatory Commission
BAU	Business as usual
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	CDM Validation and Verification Standard
CEF	Carbon Emission Factor
CER	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification request
CO ₂	Carbon dioxide
CO _{2e}	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
IREDA	Indian Renewable Energy Development Agency
MoEF	Ministry of Environment and Forests
MoC	Modalities of Communication
MP	Monitoring Plan
MR	Monitoring Report
N ₂ O	Nitrous oxide
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
RLDC	Regional Load Dispatch Centre
RPC	Regional Power Committees
TCE	TECSOL Engineers Pvt Ltd
TUV R	TUV Rheinland (China) Ltd
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation And Verification Standard

Validation opinion — summary

The verification team of the DOE (TÜV Rheinland (China) Ltd.) is assigned by “M/s SLS Power Corporation Limited” to perform the verification of post registration changes of the CDM Project Activity “24 MW Dummagudem Hydel project by SLS Power Corporation Limited” in INDIA, as described in the registered PDD (version 04, 09/10/2011) meets all relevant requirements of the UNFCCC for CDM project activities including CDM VVS and Project Standard. The request is to perform the independent and objective verification on Changes to the Start Date of the Crediting Period.

Verification methodology and process

The verification has been performed as described in the VVS version 06.0 and constitutes the following steps:

- Review of the registered PDD version 04, dated 09/10/2011
- Relevant documents
- Validation Report revision version 01, dated 11/10/2011

The verification team is able to confirm that the project activity baseline was conservatively estimated and requested for change of crediting period which is more than one year and within two year from the original crediting period. The DOE therefore accepts and notify the EB about the Changes to the Start Date of the Crediting Period.

As the project activity has been registered under VVM track, the old information shall be transferred to the new form under VVS track. Herewith, the verification team reviewed all information indicated in the new PDD form and confirms that all material included in the new form is materially the same as the information in the registered PDD under VVM track.

It is DOE's opinion that the revised documentation submitted are conforming to the requirements for Post Registration changes as stipulated in the Clean Development Mechanism Validation and Verification Standard and thus DOE is recommending the approval of the post registration changes.

2014-06-12

Date



Mr. Henri Phan
DOE/AIE Manager
TUV Rheinland (China) Ltd.

2014-05-05

Date



Mrs. C. Indumathi
Technical Reviewer
TUV Rheinland India Pvt Ltd.

2014-05-03

Date



Mr. R. Murali
Team Leader
TUV Rheinland India Pvt Ltd

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1. Introduction

M/s SLS Power Corporation Limited has commissioned the DOE TÜV Rheinland (China) Ltd. to perform a verification of the post registration changes to the Start Date of the Crediting Period to the CDM Project Activity “24 MW Dummagudem Hydel project by SLS Power Corporation Limited” in India (hereafter “project activity”). The term “UNFCCC criteria” refers to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and the subsequent decisions by the CDM Executive Board. The independent Verification by the DOE is required on the registered PDD to confirm the post registration changes with respect to actual implementation and operation carried out by the project activity. This report summarizes the post registration changes of the project with respect to VVS requirements.

1.1 Objective

Verification is the independent review and *ex-post* determination of both quantitative and qualitative information of the actual implementation and operation of the project activity by a Designated Operational Entity (DOE) towards the registered PDD.

The purpose of verification is to have independent third party assessment to verify that actual implementation and operations of the project activity is as defined by the registered PDD and conclude the respective post registration changes in transparent manner as per VVS and CDM project cycle procedure.

1.2 Scope

The scope of the verification of post registration changes are:

- To verify whether the changes is likely to lead to a reduction in the accuracy of calculation of emission reductions ;
- To verify whether the information’s provided in the registered PDD comply with that of actual implementation and operations of the project activity and in line with the applied methodology;
- To verify whether the proposed changes result in a less conservative baseline and GHG emission reduction;
- To verify whether the proposed changes would not adversely affect the conclusions of the validation report of the registered PDD with regards to Additionality, Scale, Applicability and Compliance;
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.

The verification shall ensure that reported changes and information’s are substantial, complete and accurate with sufficient supportive evidence in order to reach the verification conclusion.

2. Methodology

The verification consists of the following four phases:

1. Completeness check;
2. Desk review of all relevant documents;
3. On-site visit (Not applicable for Changes to the start of the crediting period);
4. Final Verification statement on change to the start of the crediting period

The following sections outline each step in more detail.

2.1 Desk review

The following table outlines the documentation reviewed during the verification:

Ref no.	Reference Document
/P01/	<ol style="list-style-type: none"> 1. Registered PDD version 04, 2011-10-09 (in VVM track) and Registration no. 4818, dated 2011-10-11 2. PDD Version 04 , 2011-10-09 (the old information is transferred to the new form under VVS track)
/ P02/	Revised PDD Clean mode and Track change mode including Changes to the start date of the crediting period Version 05 dated 2013-12-15 in VVS template.
/ P03/	Revised Emission reduction spread sheet with the correction in crediting period start date dated 2013-12-15
/ P04/	Validation Report version 01, dated 2008-08-07
/P05/	<ol style="list-style-type: none"> 1. Letter from SLS Power Corporation Limited to Oriental Insurance dated 28/11/2013 with reference SLSPCL/2012-13/089) supporting the claim of insurance for the flood occurred in 2010 2. Letter from SLS Power Corporation Limited to Consumer Affairs Department dated 14/06/2013 with reference SLSPCL/2013-14/042) regarding change of surveyor and delay in settlement mentioning the flood occurred in 2011 3. Letter sent by SLS Power Corporation Limited to Oriental Insurance requesting replacement of surveyor dated 04/06/2013 with reference number SLSPCL/2013-14/036 4. Acknowledgement from Oriental insurance w.r.t the receipt of letter sent by SLS power Corporation Limited dated 07/05/2013 regarding change of surveyor. 5. NOC issued by IREDA regarding settlement of insurance amount to SLS Power Corporation Limited reference number 221/2489/SHP/2008/IREDA/2886 dated 18/10/2012 6. Flood accrual certificate issued by local government Tahsildar dated 16/03/2012 for the year 2001 with reference number RC NOA/317/2012 7. Paper cutting in local language w.r.t the flood in project area during 2011, 2012 8. Delay in getting government clearances because of flood and demolish of Anicut

Background investigation and other referred documents/websites:

Ref no.	Document/Web links
/B01/	Approved monitoring methodology: ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” version 11
/B02/	Clean Development Mechanism Validation and Verification Standard (version 06.0)
/B03/	Clean Development Mechanism Project Cycle Procedure (version 06.0)
/B04/	Clean Development Mechanism Project Standard (version 06.0)
/B05/	UNFCCC no - 4818 (http://cdm.unfccc.int/Projects/DB/RWTUV1305635486.86/view)

2.2 On-site visit

	Date	Name	Organization	Topic
/i/	NA	NA	NA	NA

The PP has requested the DOE to notify the EB for post-registration changes to the start date of the crediting period. Thus the DOE has not conducted site visit.

2.3 Internal quality control

The final verification report underwent a technical review by a qualified independent reviewer before requesting issuance of the project activity. The technical review was performed by a technical reviewer qualified in accordance with TÜV Rheinland's qualification scheme for CDM validation and verification that meets the criteria of EB guidelines for qualification.

2.4 Verification Team

Before the assessment begins, members of the verification team are ensured to cover the technical area(s), Sectoral scope(s) and relevant host country experience including local language ability for evaluating the CDM verification activity. The qualification of the team is as per the criteria's defined by the EB guidelines for qualification.

Verification Team			Type of Involvement						
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Supervising the work	Desk review	Site Visit + Interview	Report Writing	Technical Expert Input	Reporting Support	Technical Reviewer
Mr. R. Murali	India	1.2, 3.1	X	X		X	X	X	
Mrs. Indumathi	India	1.2							X

3. DESCRIPTION OF POST REGISTRATION CHANGES

3.1 Changes to the start date of the crediting period

3.1.1 Description of the project activity and implementation timeline

The project activity utilizes six Horizontal Pit Type Full Kaplan turbo-generators with each of a generating capacity of 4 MW cumulative to produce 24 MW of power utilizing a rated head of 4.8 m and design discharge of 601.02 m³. The generated power at 11 kV will be stepped up to 132 kV at the Powerhouse switchyard to evacuate the 24MW of power generated and power will be transmitted through a 132kV double circuit line is proposed with PANTHER ACSR conductor strung on 132 KV DC tower. The outgoing line will be provided with breakers and required line protection system will be terminated at the proposed 132/11 kV Bhadrachalam substation 20km from site. Suitable metering arrangement will be proposed at the switchyard as per the stipulation for metering the energy evacuated to Andhra Pradesh grid. The gross energy estimated based on the 12 year gauged data is worked out to 103400 MWh. Considering the auxiliary consumption, transmission loss up to substation and grid outage 3% is considered in transmission. The net saleable electricity works out 100300 MWh and the same is considered for financial calculation. The synchronous generator shall include Horizontal Shaft Alternating Current, synchronous generator of capacity 4000 kW, 0.85 PF, 11 kV, 50 Hz at site condition of 40 Deg.C ambient, brushless exciter, automatic voltage regulators, neutral grounding cubicle, lightning and surge protection panel, protection relay system cooling water system, instrumentation control and safety devices and other accessories, spares and special tools that will be required for satisfactory and efficient operation of the Station. The generator is to be coupled to the turbine through speed increaser matched in respect of speed, runaway speed, moment of inertia, overload capacities, coupling and other relevant requirements. The generator first critical speed should be greater than 125% of the runaway speed.

It is TÜV Rheinland verification team opinion that the registered CDM project activity was implemented as in the following timeline:

Timeline	Milestone	Determination by the verification team
15/09/2008	Management decision (Board Resolution) to project implementation	Validated under section 7 of the final validation report, Report No: 8106692657- 10/133,

Timeline	Milestone	Determination by the verification team
		revision 01 and based on SLS board resolution dated 15th September 2008
05/10/2009	Civil contract agreement	Validated as the start date of the project under section 7 of the final validation report, Report No: 8106692657- 10/133, revision 01 and Section C.1.1, of the registered PDD.
11/10/2011	Registration by UNFCCC	http://cdm.unfccc.int/Projects/DB/RWTUV1305635486.86/view
11/10/2011	Crediting period start date	http://cdm.unfccc.int/Projects/DB/RWTUV1305635486.86/view

The PP is not able to implement the project as planned during the validation stage. Below table-2 explains the planned and achieved activity of 24 MW Dummagudem Hydel project by SLS Power Corporation Limited.

Table – 2: Scheduled and Achieved Milestone

Milestone	Planned Completion	Actual Completion	Assessment
Civil	March 2010	May 2013	Because of Delay in Governmental Sanctions, clearances for Branch Anicut Demolition and Synchronization approvals, the civil construction got delayed for almost 3 years ./P05/
E&M	July 2010	Nov 2013	Major reason for the delay in E&M is due to Floods in Godavari river in the year 2010,2011& 2012/P05/
H&M	May 2010	March 2013	Local issues and Telangana issue in the project area./P05/
Transmission Line &S/Y	July 2010	May 2013	Due to delay in insurance settlement and increase in project cost due to flood, there was an overall delay in commissioning the project. /P05/

Reason for delay of the starting date of the project activity	The following points are analyzed and found to be cause for delay in commissioning of the hydro project, 1) Delay in Governmental Sanctions(Branch Anicut Demolition, Synchronization approval) 2) Floods in Godavari river in the year 2010,2011& 2012/P05/ 3) Telangana agitations, Local issues/P05/ 4) Delay and short settlement of insurance claim/P05/
Is the delay of the project start date up to one year but not more than 2 years, than the one indicated	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

in the registered PDD but not before to the date of registration of the project	
Is the project in LDC (Least Developed Country)? If yes is the project start date up to one or two years but not more than 4 years, than the one indicated in the registered but not before to the date of registration of the project	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Starting date of crediting period in the registered PDD	Starting date of crediting period in approved by UNFCCC	Actual start date of the project activity claiming emission reduction	Justification and evidences (references) on the starting date of the crediting period of the project activity
01/08/2011	11/10/2011	10/10/2013	The project will start claiming emission reduction after the complete commissioning and it starts delivering power to the southern grid of India. Hence the proposed change of the start date of the crediting period is 10/10/2013. Thus it constitutes a difference of more than one year but less than two years and hence accepted by the DOE in line with para 266 of project standard. The PP has demonstrated that no changes have occurred to the project activity that would result in a less conservative baseline which was assessed to be OK.

The DOE confirms that this is the first and final time that the change in crediting period start date is been requested and no prior request for the same has taken place for the project/B05/.

3.1.2 Impact on the baseline

The emission factor and baseline emission calculation are fixed ex-ante during the crediting period. The DOE confirms that the capacity of the project and PLF remains unchanged and the emission factor are validated and fixed ex-ante during validation of the project and successfully registered with UNFCCC as a CDM project. Hence there is no change occurred which would result in a less conservative baseline. The DOE concluded that there is no impact on the baseline and is in line with CDM Project standard.

3.1.3 Findings from the previous verification reports

- ☐ TÜV Rheinland verification team confirms that the findings from previous verification reports, if any, have been taken into consideration.
- ☒ TÜV Rheinland verification team confirms that no findings from previous verification reports have been taken into consideration.
- No initial verification has started. PP has contracted TUV Rheinland to perform verification on proposed change in the start date of the crediting period prior to the commencement of a verification of the project activity.

3.1.4 Conclusion of the verification team

TÜV Rheinland verification team concludes that the post registration changes are assessed as per VVS requirements.

The project proponent has requested for a change in start date of the crediting period from 11/10/2011 to 10/10/2013.

Since the claim of the start date of crediting period is more than 1 but less than 2 years from that of registered date of the PDD, the verification team in line with para 266 of project standard has made the assessment on the baseline, substantive progress of PP in starting the project. Thus DOE concludes that the requirements as stipulated in the Project Standard have been met whereby

no changes have occurred to the project activity that would result in a less conservative baseline, and that substantive progress has been made by the project participants to start the project activity..

Appendix A

CERTIFICATES OF COMPETENCE

Qualification

Ramalingam, Murali /

Emission Trading

United Nations Framework Convention on Climate Change

(The following data is set by the certification body)

Auditor No.:

(AuditorenRegNr)

Appointed:

(Zugelassen)

ja

Qualification Level:

(Qualifikationsstufe)

Lead Auditor

External:

(Externer)

Add. reviewer:

(Zusätzlicher Prüfer)

EAC Scopes:

(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)

CDM 03 - Energy demand

Add. qualification:

(zus. Qualifikation)

First Appointment:05/15/2012

(Erstberufung)

Valid to:

(Gültig bis)

05/14/2015

Remarks:

TA 1.2

TA 3.1

Languages:

Tamil

English

Experience Exchange

Date

Location

Remarks

Accreditation(s)

Monitoring

Latest Monitoring:

(letzte Beurteilung)

Next Monitoring:

(nächste Beurteilung)

Remarks:

History of scope allocation

Date: 2012-06-18
Change: EAC CDM, CDM added
By: Praveen Urs
Reason:

History

Created:	06/18/2012 10:47:56 AM ZE5B	Kaustubh Rane/Ind/TUV
Modified:	06/18/2012 06:02:36 PM ZE8	Praveen Urs/Chn/TUV
	06/18/2012 06:02:33 PM ZE8	Praveen Urs/Chn/TUV
	06/18/2012 10:48:25 AM ZE5B	Kaustubh Rane/Ind/TUV

Qualification

C, Indumathi /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No.:
(AuditorenRegNr)Appointed:
(Zugelassen)☒ jaQualification Level:
(Qualifikationsstufe)

Lead Auditor

External:
(Externer)☐ jaAdd. reviewer:
(Zusätzlicher Prüfer)☒ yesEAC Scopes:
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)

Add. qualification:
(zus. Qualifikation)First Appointment:
(Erstberufung)

06/07/2012

Valid to:
(Gültig bis)

05/07/2015

Remarks:

TA 1.2

Languages:

Tamil
English
Hindi

Experience Exchange

Date	Location	Remarks	Accreditation(s)
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Monitoring

Latest Monitoring:
(letzte Beurteilung)Next Monitoring:
(nächste Beurteilung)

Remarks:

[View / Edit Monitoring](#)

History of scope allocation